Notebook Series -- Pocket Notebooks
Notebook, PN-15-06-08

The dated entries in this pocket notebook cover the period May-July 1915. The book was used by Edison to record ideas about business matters, experiments to be tried, and other tasks to be performed. Some of the entries have been crossed out. Others appear to repeat entries from earlier books. Included are experimental notes pertaining to disc records, new phonograph horns, and battery cell tests, as well as numerous chemical experiments to be tried. There are references to Edison's new benzol plants at the works of the Cambria Steel Co., in Johnstown, Pennsylvania, and the Woodward Iron Co., in Woodward, Alabama, as well monthly production figures for the Woodward plant. Also included are references to the rebuilding of the Edison Phonograph Works after the fire of December 1914. In addition, there are sales numbers for Edison phonographs and records and for the Telescribe, a combination of the telephone and dictating phonograph; notes on voice trials for recording artists; and comments by Edison about the lack of opera and classical recordings in his company's catalog.

Among the numerous Edison employees mentioned in the book are H. H. Meno Kammerhoff, supervisor of operations at Edison's new chemical plants in Silver Lake, New Jersey; chemists Victor L. King and Ludwig F. (Louis) Ott; Harry T. Leeming, head of the Purchasing Dept.; Charles W. Luhr, superintendent of the West Orange laboratory; engineer William H. Mason, who supervised the installation of the Johnstown and Woodward plants; and John V. Miller, Edison's brother-in-law and manager of the Edison Chemical Works at Silver Lake. Chemical manufacturers and suppliers mentioned by Edison include Butterworth-Judson Co., Du Pont de Nemours, General Chemical Co., Heyden Chemical Works, Merck & Co., Mitsui & Co., and Monsanto Chemical Works. The pages are unnumbered. Approximately 150 pages have been used.

PN-(15)-06-08

x.2996

Dorer

Hoz-

Should 62

6ft 9-

b.f.l
23
22

(1)

7

17

119

541
119
660

.4 ½

135 | 730 | 5 4/9
675
550
540
14 90
1

700
119
681

914
50
964 6000 | 100000 | 16
6000
40000
36000
4000

7 | 4000
2 | 571-
285

$250
500
125
24
15
914
110

11000-

12

Mich Alkali Co W yandotte 30 Coke Ovens use for fuel –

Dip a Condensite Matter in very thin Varnish (Regdese) thinned very much with Alcohol Dry in then Graphite + plate –

What has been done with old Adams Ex returned batteries

Get Blue Furnita.

Might pay get for window shade of Dealers large letters of Eco Victors — + Composers

Riley – Reate Niagara Falls to sell Victor we have no dealer after receiving have one of our men get a dealer

(5)

Hayes why not put out
Opera Overture — Clem De Vere
Etc —

We need an automatic
device to put lettering in
Edge letters on Disc —
Simpson

Constable — Curled Horn

When steel Cup Studio done
Play Espoir - Melodic
Beautiful badly done by
Crosbie. — Who is composer

Nitrous Acid Converts Aniline into phenol -
Use Aniline Hydrochloride &
Silver Nitrite

Beaumont & Anderson of Glasgow
Scotland Pat Pat 23605
Oct 18 1913 Use claim to
settle dust by electrifying
Nozzle which is a fine jet the
Microscopic bubbles attract the
dust & Coalesce

Harp sounds sweet because
it has no slap like a Piano
to Cutsound short if we put
a dash pot on Slap hammer
it would go slower & swell
would Carry over longer &
gradually die out & sweeten
the Sounds -

Get proportion of sales in selected by Cities to total sales in USA

Ulant runs on 368 E its short tube soaked in Conc LiOH 24 hours + then put in 21 KOH. only — No LiOH.
also 357 — 82% at high rates.

At Aniline Plant Mfr Acetanilid —

Have boy enter details of Cost mfr phenol from Dust book to this —

Holeqeber 1914 French Pat. 460 827.
Oxides Ni or Co or Cu deposited on Pumice, heated gives large yield Vapor of Hydrocarbon
Bayol - J 1914 p 17

Put up 4A4 15% NaOH for long test —

Diphenylamine Blue

Action of Oxalic acid on above at 120 @ 130 Cent, its Sp wt Soluable – Sulphonate it or its makes Alkali Blue or Nicholsons Blue.

Charles say Tech man Employed Abbotham Construction Co A.I. advancing rapidly gets 50 to 75 a week is good at selling or Engineering

By adding Zinc chloride the making of Acetanilid is shortened several hours = H2 at 75 grms pure Aniline with 3 to 4 grms of Zinc Chl + 75 grms Glacial Acetic in flask with reflex tube for 3 hours pour in water, wash Crystals with Cold water, recryst from Boiling water, its economy to use pure Aniline to get rid of the Color

Get 10 Tons main springs week from American wire rolled

Vic L. Healy 1914

Sold retail $1.82 of machine per record sold - based on 85¢ per record average

If average is $60 per machine sold, then 33 records were sold in 1914 for each machine sold including trade from reb. Their profit trade.

Based on 35000 records daily Vic makes Daily - +$1.18 per machine for record sold

They sell to jobbers 8000 000 Machines
4 462 000 records

$12,462,000

Gross receipts - 1914

Million Mark at out,

If 10 sold with each machine + 5 every year after of records, it account for sale of machines 1906 to 1914 - 64644 -

Extra line of shafting put up in old shop from reclaimed shafting so can move in sections

Want a hiring Man —

Genl Manager Asst.	Fleming
Supt Maintenance	Nicolai
Secy + Treas	
Credit	Phillips
Traffic	Rogers
Foreign	Stevens
Head Accountant	Nickerson
Manager Sales	
" Demonstrators	Riley
Advertising Man	McChesney
Efficiency Engr.	Mambert
Purchasing	Cheshire
Legal Dept	
Auditor	
Vice Presidt	Wilson

2nd Vice Presdt.	Charles
Business Phono	Durand
Bales	Burnham
Film Dept	McCheney
Tool -	Weber
Production Engr.	Wetzel
Primary Bally	Hudson
Yard Manager	
Disc Records	Hird
Cylinder	Nehr
Shipping Records	Baldwin
Screw Mac	
Lathe - grinding	
Drill Mill	
Reproducers	Simpkins
Polish - Japan. Horn. Plating	
Assemble Cabinetmakers	
Assembling Sub + Mach	
Punch rough grind + Blacksmith	
Electric Power Boiler Water	Nacchi
Duplicators	Werner
Engineering Designing	Conselice
Machinery hab	Luhr

Chief Draughtsman	Caum
General Engineer	Mason
Jig + Tool Designer	Olsen
Experimenter	
Dumwiddie Moore, Christensen	
Goff, Dailey Fred Ott	Wurmer Lott.
Chemist	King
Boss Carpenter	Driscoll
Pipe fitter	Burns
Chief Engineer	
Boss Pattern Maker	Mudd
Photographer	Ludder
Chief Tester	Halpin
Packmaster	
Mech Hirer -	
General Efficiency Engr + Costreducer	

for obtaining spare parts of
old machines to supply
our old trade, why
not trade in old machines
take them apart & use
parts — ?

In Assembling room special racks
to hold Disc & Cy. Bolt & Kinds
to wind up a reel then test
for noise in Cabinets in both
before going to storage room

Determine size of boxes to
hold parts for 2 weeks supply

Box for tools adjacent to Operating
Machine, locked, possibly kept
in part room =

Present model of Shelving
determine amount required

One person on floor sharpens
all tools, drills, men don't

Take 2 hours for time to settle after Na_2CO_3 used

Sulfonating Mix
73.5 percent Sulfuric
26.5 " Benzol -

S

Late Danish Patent:
Preventing Static Electcharge in Benzol drums
A cartridge or a chamber is disposed in the mouth of the supply pipe + provided with a wire gauze connected by a wire to Earth -

Complete details in mfg Salicylic, Acetylsalicylic, Acetylsalol given in Chemist + Druggist Vol 85 313 p 1914 — English & Clark

Old plant Sulfonation 8 hours
3 Sulfonations 24 hours
3 Fusions " "
900 lbs Benzol 50% with 720 lbs Caustic produces 420 lbs Phenol -
1.71 Caustic to 1 Phenol -
Neutralizing 8 hours 400 lbs.
Distill 550 lbs 12 hours

(21)

Mason Washes his 90% thus

800 gal puts in $\frac{1}{3}$ of H_2SO_4 runs
10 min another $\frac{1}{3}$ runs 1/2 hour,
final $\frac{1}{3}$ runs 15@20 mins
Let it settle for 1/2 hour - draws
off tar + acid, stops drawing as
soon as Benzol appears
Then without using any water
which makes bad emulsion
takes 10% Solution of NaOH,
+ puts in an amount of this
Equal to 10% of the Benzol
Runs $\frac{1}{2}$ hour, Draws Soda
Water off - then washes with
water, this makes some emulsion
Settles $\frac{1}{2}$ hour, then runs it
in the Tank ready to distill
to Pure.

His 90% Still Tank holds
3000 gals —

Now being the fifth patent,

Order Extra tanks for Kammerlaff to be 20 x 8 phenol in neutralizing solution —

We should put up 200 more plating tanks to increase our facilities for making 150 bearing moulds per day for next winter —

Joseph Kruppers man
Morning Cave
Mc Clevt Gas pipe Co
Set
Chrome Tills 2 inch
[illegible] for 4 oth

Hereafter I pay on all Cylinders accounts —

Mitchell — S Bat Research
Take Nifrom Cell no
Plating & put in Cell with
New Lugs & Old irons in
New Cell New Negatives —
& Run — Save old Cans
& parts —

Monahan — See his tool
for Taking Nickel — Iron out
Oil Cells & look N to look
about Regenerating 300
old Cells Saving Everything
to get at Costs & Reg
Jo Miller up so we can
put it in Reg practice —
tooled strong enough on this
Z

(28)

Extra space for wrapping parts

Box for parts set in to give right number of parts — Letter make sample —

Have the man who is getting parts, to get cost raw stock on standard disc 1 & 2 spring & Amberolas before machining & get waste — also Knuto, Big & Baby

Ask Kammerhof if he has a leather jacket on his reflux at Sulphonating tanks

Sulphonate some of the light & some of the heavy Dalbert Naphtha with & without purification will need — Condense by 6/4 To Remin —

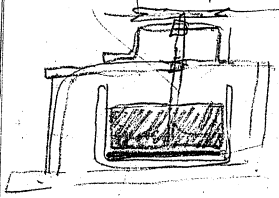
Bitty Co Payroll for Phoud Cut

63	Clerks	40
40	Foreman	25
73	Inspectors	40
22	Miscellaneous	15
128	Toolmakers	60
25	Jobbing	

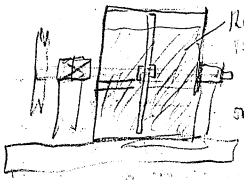
Etc Etc

387 Non
885 Preferences

Get the rate straw oil will pass through 80 mesh screen. Try cloth as metal wire cut up —



Disc mould



Try Expt this

Lubr make —

Sumpkins

for burnishing Copper Mould

Grimes about Echo

Raise Wel ~~Wel~~ to 60 —

Sulfonate & fuse some of the highest BP Solvent Naphtas see of Condensate —

Try Myrbane, Anelme oil,
Monomibromonaphthalene, Monochlorbenzol
Monobromobenzol,
Benzenesulfonic acid all
with 40% formaldehyde chem
+ Reflux tube on steam
plate, . Rumerson in alcohol
with 6/4 Mack on plate.

Try in blank the highest
Boiling point Tar oil
500 c so none gets in
alcohol distilled from
Vac dryer - it must be
sol in alcohol

Mason to send ~~me~~ box
of slude Tar want to see
if any Kumerson
Tr

Ask B Sanwell if he wants to
trade 10 000 gals Bengol pure
for 10 000 lbs Carbolic pure for
Nitrating.

Leonung - of Cambridge, Mass
ordered for ~~the~~ accumulator
part -

Loan ~~King~~ $200. *

Copper plate slush
pot iron ~~ring~~ Plate Cu

Want Lady scales Big
+ telescopes -

Also Family bathing -
Bates -

(31)

Constable - phone us our designer [illegible] you - make list of things you are working on

Find out who has [illegible] our tracking [illegible]

Get Song "I will [illegible] you of you'll let me"

Take up with Hood & Preston putting in stock 20,000 [illegible] selection & 500 [illegible] to be kept in stock - get list of Record [illegible] stock & sales & make out a schedule & start 10,000 again

Spaulding Aircraft [illegible] by Monsod to be French by Schumann,

Dupont sent us some wood pulp dry some time ago it was longer fibre & not much Coarser than Spruce I think it could be done — as two short & fine fibre not good

2 Cells At 4 only tubes stacked - Everything Else not plated [illegible]

2½ c Lb Sulphate Soda

Erigplancine = N063.

Fred Otl = Bulton with Hydrate of Camphor — MCP.
Cinnamatic acid polimerized
Naphthalene —

King which cant the Benzolphenol of Na be over limed + heat to 575 + then CO_2 passed then phenol got out by Benzol.
possibly little acetanilem or [illegible]

McCheany refurbished
Take precautions on fire

Weather Record found
Aug M Coulpelloq
Dufrano —

Helen Clarke work her so she makes 50 cents

Constable Pointers
on Speed Regulator
Movz

Romance Les Deux
Violin Solo with piano accom.

Hoffman Augustus Loze
Phenol

(3)

2 Dryers for Cream

Contract for 1000 Tow
Cost over 1000

See Shower - presses
6 month Cradle -

Throw about Vacuum Dryer
6 month Cradle

German Silver Scales

Mould holders -

Powder presses mould

Transfer press mould

Ovens - get Yeast
of other things -

Rec of Bachman shipped
the Copper works

Mason - Fan and our
Costs of Water & Steam

Harry - Wand pay Cantina
or Work Award

Pure Sulfate Copper

Counterfeit and Sulfate
~~Ammon~~ Mangnese.
Sang Mentoko! -

Arrange that when a
Recital man gives
the name of a dealer
he report it to dealer
on post card & relate
where recital was
about ask for name & official
purity Volunteers —
G

Kennedy = Edison Shop
down town has a violinist
who plays at recitals
Try & get him try Expt
Machine behind sheet
greased how & play
Ave Maria —

Also one of our singers
sing a song but utter
no sound

6000 lbs Phenol Daily

750 lbs Magnesium Chl 6 H_2O —
1380 lbs 66° B Sulfuric
9600 20% Oleum

For Aniline Oil reduction
3000 lbs day

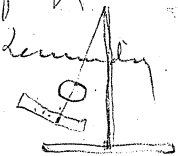
450 lbs HCl 40%
565 " 32%
645 28%

Cost May 17/16

Aniline 31814
Phenol 45490
Wood wood 48.313.

~~German Silver Plates~~

~~Kennedy~~



~~Test Even space~~

~~Manbert - Want get out statement of shows who & Th & Theorp to show banks - It good time now as most quackers in~~

1 = Benzol = Formaldehyde
or 4 Peroxide Lead

2 " Chl Zn

5 = " MnO_2

3 " Co_2O_3

Send 150 to Long Island Hospital -

Hudson - Common Spelter
20 cents this would
be 24c for Bertha -

~~Mallory - Couldn't you get some kind of wax work from Swab~~

(41)

Jnl Chem Industry
1909 p 982 –
Nelson & Putnam

Stock for Lyhr for
Disc Rec (increase)
plant

Kammerer & colleague
he ordered the absorber
for phenol from
Liquor –

Try PbO_2 Formaldehyde
& Solvent Nap on
Reflux –

Dec of Benzol dissolved
the Vulcanized Rubber –

Try the sheet Rub with
mix of Solvent Nap &
CS_2

1 Oil + 1 Alcohol
Sol Nap & get 1/2
Xylols –

12.50 lb 10 Sacks
Wax –

Centrifugal
Contact,

Ask Parker watchmakers
Beg Cenbry fuzzes —

Johnstown Benzol
for Monsanto —
do Wisconsin Iron Co

Time each operation
Disc Cy 10 3 —

We use 23½ Cylinders
Pana 12800 Blanks —

1 gram Paper per 66 cents
13.2 gram Opal plate Carbonate
.360 with your Record

Ask King amount Soda Ash
required Regularly

Learning Brongs Speakers

1/2 S 3 Dm

Pulley. Motor

Write Bacon & see if
he can find out how
much coke & slag
we are using Daily

(4)

Resin mobland 68.5 grms 4 to 1

114.5 grms phenol to
Complete recond —
20% excess 4 to 1 —

69 grms phenol to finish
45½ " Veneer

Pretty dry filter pieces
Lime. Weight 131 gram
acquires 160 cc of
water & good stirring
to get a mush that
will flow along a
2 ft trough with a
little assistance —

put it on filter & left all night
found 26 grms came thru

Measoff up the Gone
Elec if change for
Longer Mixture —

Put Aniline plant in
P Service Elec

Try glue 6/4 & Pura for blank

Try Casein & 6/4 & Para. "
using Mthy alcohol to make
Casein sol of consistc —

Shellac & fuse phenol with
& without 6/4 & Para.

Try Sandarac
" Cheap Kauri
" Manila Resin — Dammar

Arthur wants 50 Copper Tanks Carbolic

Hurry up office –

Get Opdyke down to works

Drawing for 6in for iron boxes

Place to store and handle Benzol drums

Schedules for acid + Benzol for Aniline Plant Opdyke attend + after return drums + cars

Dills Carbolic Plant

Schedule for shipment Aniline for next 2 weeks

Review Hurry drawings for Slats for absorbers Johnstown + Connellsville ~~boards~~ Boards 7/8 or 3/4

Aniline Salt Shed also Vats + other necessary things

Supply HCl for Aniline salt

Paraphernalia Shed why don't we go ahead with office bldg

Make out a start Kannenhoff Saves bldg + arrange things

Arrange Kannenhoff supply Benzol for Aniline

Miller find out who smashes our drums

7x7 place unload drums so dont break them —

Miller How about Governor on 100 KWH Engine —

See if steam pipe going to Afternoon Concentrator drums occupy from Engineer (TE) Night Man

Listen to Voice Trials

See Simpson on Smoke Chemistry

102 are having trouble Exhaust Steam blow over not cool Enough to Condense — see H of Afternoon

Tolefson Mason pick Excelsior as One third occupies beads as before.

Anilin Hydrochloride —
Saturate Anilin at 100 Cent with HCl free of Chlorine — after standing few days Salt will pass out, to then filter from Mother liquor in Centrifuge + dried at 50 Cent = Blanchor

Zinc Chl reduces time of acetylating
Accumulate 3 hours 75 Anilin
75 acetic = 3@4 gm Zn Cl2

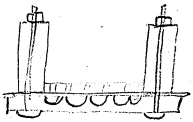
While pickling in Acid in Salt solution Tank should be water cooled, Phenol
Washer Reny Na in Centrifuge with Cone Nacl water —
If want CP Reny Na dissolve in Hot Absolute Alcohol, the NaCl dont dissolve —

Try Hypochlorite Na on Benzoin surfaces and or Benzoic Ac Na on Hypochlorite Lime it might make phenol —

1 H Phenol sequence: 4 lbs Limestone $CaCO_3$

Use some glue in the Sulfite recipe to lengthen, dilute glycerine —

Make another Sepiant with 131 gr lime & 160 cc water & Brown then add water acc of gas. Then blow if not deep enough & drain then pick off —



Cut across not longitudinal

Oil

		May	June	July	Aug
Miller Rubber Co Rush		120	120	120	120
Doggett	✓	693	693	693	277
" Tuck R Co —	✓	154	154	154	—
		—	385	385	385
Hollender Salt 121 all Tuck		154	—	—	—
Waldrich Bleaching Rush		134	134	134	134
Plumsynade Mills "	✓	77	77	77	77
Scotland Neck Mills ✓ 4 Exp		77	77	77	77
Mitsui	✓	100	100	100	100
Morrison Mfg Co —	✓	100	100	100	100
Seydel ✓ 1/2 Adam Reed		2	231	231	231
R Meyer 1421 all in June		—	69	—	—
Pa Knitting —		—	—	35	35
Doggett —		—	385	385	385

Salt.

American Print Works	Salt	166	166	166	166
Hollender	Salt	1121	—	—	—
Doggett ~~Turnsalt~~		2 Tons	—	$2\frac{1}{2}$	
Tuck R Co 2 Tons May					
Fire-stone 60 "		7 Tons	$13\frac{1}{2}$ Tons	10 Tons	5 Tons
Morgan & Cowgill		$6\frac{1}{2}$	$6\frac{1}{2}$	$6\frac{1}{2}$	
Melville Mfg Co R E L Hoadley Co	1 drum May		5 Tons	5 Tons	5 Tons

May	1614 daily	
June	2294	
July	2260	3908
Aug	2652	

Trades with Hoffman

	Gals	Carbolic
1st	3340	.4425 Poly
2	12870	.21012 pond
3	15000 about	2000 lb
4 -	25000 —	

Ozodyke - Ammonia
$380000 Lynn 8
pay Ogdoan —

See whales Mallet Ammonia Pat
Ammonia Ventilation —
Bragger press Mybram pat,
Mullen with fuming pat
gas —
Mullen on coiring
Offices

Kung - Pelbrooch
Hood Feel Pleny 903
in Lime Mind

Kung not runoff Sass acid in Nitrating acid —

Henley Order Motors Rotators & Everything for The Z
Extra Kerosene Illuminating Rots —

Also another Turbine Reducer & Extra Tanks,

Order another Lorem (egg) for Extra prot (Auden Zeder)

Extra shafts & paddles for Mystbrane Rotts —

Ditto Sulfonalying Rotts,
Extra Ammonia fittings

Extra Cylinders & Compressor for Engine —

Wrot pipe double X —
4½ ft. 2 3

If Cement not forge —

Learning about Concreting Sacco Tank —

Luhr Tear out side of Para Ship

Kung wants holes right in bracket of Cauler fungal

Miller - How much power
his Coulrefage takes -

[illegible] of X/X and
[illegible] Silver Lake

[illegible] 245 gal mix
150 Benzol — 3430 lbs acid
10 Nitric 15 SO4 40% nitric 52.C
H2O 112 —
4 acids 10.9.

Hexter = Geoffroy - Blue Prints
Nitrating Pots —
Mean out of cam

Ask Dover of the cam
get contact Sylvan Lake

	Daily	Drums Daily
Firestone	1000	1.2
Miller R.Co	120	1 week
Fish Rubber Co	154	1 1/2 week
Morgan & Wright -	385	3 week
Waldrich Siegling	134	1 week
Runymede	77	6/10 week
Scotland Neck	77	6/10 "
Mitani	100	8/10 "
Merrimac mfg Co	100	8/10 "
Seydel	231	1 8/10 "
Sargent	385	3 - "
		15 Drums WEEK

Salt 2775 daily 12 375 lbs -

Hollander 1121 lbs all weight off
Amen Print cloth - 1080 lbs week

7 days 2378 -

15 1/4 week Oil - 825 lbs Drums

Chrualcum –
Test acidity of water over which Nitrobenzol settles before going to still – Heavy heat still up –

Plenty Car 6370 here
South about 10 window
6516 no
95% acid

Lead line one outfoaming
Pat –

Distillation – Alcohol Lamp
Violin – Hughey
Song – Muggrum
accompanied by
Lizzie Sly (?)

LOH fill tubs full Mflake
Heat little above Boil pt of
Nitrobenzol pass Vapor
Hydrogen through Nitrobenzol
15 or 20 deg below it
boiling point + grant
Vapor thru the tubs &
then to Condenser To
Condense the Aniline

(60)

Opt King 100 lbs Zinc Dust
for Aniline decolorization

Order more Sulphite
Received from Steam —
350 lbs —

Order had Sulphite
Check Line —

13.36 lbs gal Mix. acids

Contracts for acid. June 13
to April 1st 1916

175 Tons month Mixed acid

59.00 % H_2SO_4
26.27 % HNO_3

2.90 cents 100 lbs

to Dec 31 1915

100 Tons month 98% acid

150 Tons Oleum (20% fuming)
1.12½ cent 100 lbs —

Aniline Oil BP 183 cent

test for Hydrocarbons —
Nitrobenzol —
5 cc Aniline add 10 cc HCl
dilute with 15 cc Water
No cloudiness on cooling

Have contracted Mizzachi
for 200 Tons month 98% H_2SO_4
May start — Thus is for
Raumanhoff — 1st 100 lbs

Continued with Genl
Chem April 15 To Dec 31
100 Tons month.
98% 1st 100 lbs

Oleum Genl Chem 20%
Apl 15 To Dec 31 —
150 Tons month.
1.12½ —

Mixed acids
350 000 lbs month 175 Tons
May 1 to April 16 1918 —
2.90. 100 lbs — 59% Sulfuric
26.27 HNO_3

B&J — 3.80 Del — for mixed.

275 gal Bengal
30½ 98
213 gal Oleum
12½% 98% 87½% Oleum

2093 lbs Bengal
3538 lbs Acid
1.69 acid to Bengal

Order 5 Tons Shellac
ask Hoffman how he got rid
of 1500 lbs so quick

B&Judson — Mixed acid at
3.80. Costs for acid 12 Cents
lb of Aniline
Genl Chem at 2.90 — Costs 9.47
2½ Cents less.

Cost lb Phenol for acid Genl Chem
1.12½ 1.88 cents
B&Judson 20 lb 3.38 or
1½ Cents more.

CHJ

If I pay 65 cents gal & make 6 lbs to gal & sell at 75c for Phenol. I make about as much within 1½ cents by trading gal of pure for a pound. As this is a easy way to get Benzol its of good trade,

Save gallon or so of the Mixed Acid after nitrating bring to Laboratory & see if it will nitrate more Benzol.

Think 5 or 6 to 1 blank stick better think blank 100 weak & fibres pull off — If it gives poor % from Checking, do some experimenting such as adding a little phenol 6/4 & Pana —
Don't remember if we used Paraw 4 to 1 Elk creek Moore —

How about Trucks for assembling room — Little Assembling Table —

How about Oldshop was it nearly finished —

Way to B+ Judson
Will take 75 Tons Oleum
per month balance year
40 Ton
Also 160 Tons month
Mixed acid at 3 80
for balance year.
They accept this

Ask Will How much metallic
Iron we use per 1000 cells
+ also Saving Oleum

Hand, we are mfg 4000 more
than want, go ahead now +
make up all old numbers of every
Kind - for stock.

Hunter Mew wells
bug acid Eggs
Shipped 19th

Give Chandler & Barnell
for coal fed from
Mynbaum ceterbi —

J Lamph 68 Whitney St
Newark —
Foreman for Bailey
Had charge Creamery
Butter & Cheese etc
3 yrs —

Centrifuge 575 Red Mun
1100 Ray & Perfect

Cambria Wages 325 Lady
Counter 911, daily including Bacon
Want steam now 38 gras
per hp 100 hp

Shed & 10 Lathing Tools
for men

place for 2 more
Centrifugues

If Dominion Chemical
Tells good put
in yard for Anline

Send over 1 ton Crude
for Kenyon Cty has none

For every ton phenol .4700
lbs of Muck from Cans —
2400 lbs per 1000 lbs Phenol

Caustic Soda Contract
for 1 for 9000 lbs Phenol till May 1st

Get slow speed motor for
Tuer, Motor 800, pully 10
48 Rev shaft be 20
Weight Engr for Compressor
30 C

[71]

Packing - 6 bolts etc
Put Lozzellier & Refl
up with Lozzellier

Page for Centrifuge

Enquire water dispos

Light on Aluminum

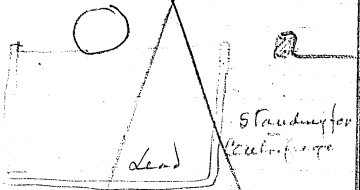
Enquire —

27	200
28	400
29	400
30	450
31	800
32	800
33	800
34	800

Samples from No 6 Bengal
distilled all at 205° C

Iron feed 1200 lbs in
10 Hours — can change

Speed [illegible] 1/8 HP Motor



Step cord going on
Prime Tronto — Lodge turned
up —

Crusher for ~~Muck~~ for
Centrifugers

Kung did you order

Mechanical [illegible]

Emery & diamond [illegible] Co.
(Keepout)

Long Condenser
Tube for Sulfonday
pots at top Low Temp [illegible]

Puck Covers are hopped
iron feed to Amalgam pot
& have center holes +
lid so can be opened to
fill & tight closure = Screen
c 1/8 mesh -

Mica Windows in end of
iron screw feed on Amalgam
pot easy cleaned.

Lid Top with Tanks, vent up
to roof -

Acid to wash hands, to dissolve
amalgam -

Still to test Temp of -

Phenol Contract

Mitsui	1660 lbs day	50¢	March 1
Shimoloff	1000 "	76¢	May 1
Hoffman	1000 "	76¢	Jan 1
Hayden	1000 "	50¢	Hence declared
		86¢	

Why did Phillipsburg Pa Auction Jr Drug Market fail —

Cover grease on all pat. - Make safe

Reason why box slow down centrifuging the Motors

Pat of Vaseline (with grafite to grease and Rocks - Oil flake Putty —

Mystone 10 inch tank Double Lumber —

Get rating from Dun + Co Bugget Wolfe firms —

For New Carbolic 10000 lbs daily 7 days 1250 lbs Magnesium chloride 37500 lbs month, Place order for 6 months $4500 - total Value

Place order for Caustic Soda till May 1st —
10000 lbs phenol 2 lbs
Caustic per cb —
17000 lbs daily —
Contract will be 2500 Tons
$90,000, total

1.71 Caustic
1 phenol

Average Price Aniline sold at 48 Cents, June 17 =

See if a bottom Can be put on basket for Centrifuge

It evidently has its 4 Centrifuges, 1 Centrifuge 20 mins = a Crew
Weight 200 lbs — 400 lbs in Can — 20 minutes
5 men to fill 5 to unload

See King about time it requires to freeze

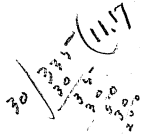
Order 50 More Copper Cans

Our fine chief go to Anilin plant Beach to arrange —

Put on Night Inspector or Watchman at Stake.

Le Priest, Canadian Journeyman press —

I guess Mixed is 5 to 1
of phenol, by weight
see How King Makes it.



June 20

Latest on acid orders

100 Tons 15% oleum San Francisco

Genl Chem 175 Tons month
Mixed acids, I furnishing all
the 98% or 100 Tons monthly

Genl Chem 100 Tons month
98% all of which is used
in the mixed acids.

Butterworth & Judson 160 Tons
mixed acids - Month -

Total Mixed acids -
335 Tons month

Phenol

Genl Chem 150 Tons 20% SO3 Oleum
Promise 30 more
May get more from Frisco
for 8000 phenol require
190 Tons.

(81)

and 23 tons 98%.

Hence 10 Tons month
Ship on Oleum
23 Tons on 98%.

Any more output must have more Oleum

1000 lbs Phenol additional 1630 lbs daily of Oleum 202 of 98%

May get 98% from old plant if they can use weaker acid for neutralizg

Aniline requires 48 Tons month per 1000 lbs aniline month.

Above contract gives 6000 daily 30 days

Dr Meadowcroft recd of Correct.

Stenos for Rammelsberg big Sacony Tank + both second tanks

Benzsulfonate Soda
white dry weighs 50 lbs Cubic foot, from Contractors
~~Dried 24 hours~~ only 40 lbs
~~March 14~~ March

Lott, plate lead,
Want Coat Copper Cans
Litharge in KOH
Lead anode

600 gal ~~[illegible]~~ of water
4/8" high (LD Tiler)
1350 lbs ~~[illegible]~~ Salt
then Run in Benz
till overflows 6½ inch
325 gals Sulfonic
acid pump

600 gals water (43" high in Tank)
1350 lbs NaCl
325 gal Benzsulfonic acid run in
Till shows in Tank 6½ inches high

59.45 Daily average Aniline
Schwarzchemicals 60.65
Goldie + Assoc 580
7 24.4
No Gain

Experiment June 24th —

80 cc water.
30 gram NaCl it all dissolved and temperatures with some difficulty
54 cc Benz Sul acid from King plant, Poured Benz Sacid into NaCl Solution didnt notice HCl fumes — got very hot, clear Solution — Chilled in Ice water Very thick mush, Vac filtered it 1/2 thick disc, chilled again got 1/8th inch disc, then added MgCl, while cold, got 1/8 disc Tried more MgCl, practically Nothing — Chilled it in ice got 1/64 @ 1/32 probably 1/16 1 1/2 % more
This shows acid in MgCl lowers should settle + get cold — Could save 50 to 100 lbs phenol day if ice cold probably not pay

Tried 95cc water
30 grms Anhydrous Na_2CO_3 it dissolved — poured 54cc Benz Sacid in sections pralled from gas + very hot it was nearly solid mush when hot Its very much thicker than with NaCl cold
Should try over again —

135 cc Water. -54 Benz Sacid
42 grms Sulphate Soda Anhy — 110cc didnt dissolve it and temp so added 25cc More Warm Clear solution Chilled in ice went thick mush — filtered Vac got disc 75% of the thickness of NaCl — Chilled again got 3/16 disk — Then put in MgCl — got 1/4 of inch disk showing too much water used
This is promising if can get

enough Soda in with 100 or 110 cc perhaps 42 grams is unnecessary

In all these Operations look out for Water. Anything above 100 cc or 30 grams Nal, bad –

Joseph Buckmaster

1 Sulfonation 3600 Lbs Dry from Centrifuge yet 2554 –

bat must be in Dry Tuesday –

Diphenylamine

Heat 1 ½ moleculs Aniline with 1 mol of Aniline Hydrochloride to 210 – 214 for 30 to 35 hours in a long necked flask provided with a condensing tube or more quickly by heating mixture in Vertell under pressure to 60 to 75 lbs pressure –

Zinc Chloride.

Treat product with 3% HCl Diphenylamine decomposing base separates rises to surface as oil, Solidifies on cooling

Purified by recrystal. Crystals from Benzol or ethyl Alcohol Coloring matter mech. finally by distillation

Modern way heat in centrifuge 210 – 240. Broken not treated HCl then excess of water washes crystals

Lowes OK, gra. weight per gal also specs of purity of Benzsulfonic acid –

King says.

600 gals Benzsulfonic acid
1200 " water
2700 pounds NaCl –

Determine amount of NaCl required mix + test if not enough add more + test solution should be cold. May have to cool down to 40 Fahr if want high yield –

15% Oleum is OK use 3660 lbs to 2000 lbs Benzol + no 98%.

Should wash out crystals in Centrifuge with a little Saturated Salt Sol

King (Continued)
Temperature fusion should be 300 To 330 Cent its usually 308 To 310 best,

Caum - Want Lime the Condensing power on Inclined pots

Kamerhoff -
2 big Furnace pots + Extension blds To keep old pots going

from time start to melt Mi - 930. 930 24 hours

Started put in Salt 10 ~~pm~~ till 8 am -

Order Longer Therm for fusing pot, King has mend he comes to ques to goldie

748 Old plant [illegible]

Start, not hot, have to cool down + let [illegible] run + then dig it out

2½ @ 3 hours melt NaOH.
put all salt in [illegible]
3 or 4 hours — at end of the 4 hours [illegible] has been placed — Adding Salt
Cool as salt is put
room temp —

1050 lbs NaOH 1500
lbs Salt. [illegible]
7 hours — to 8 hours
766 lbs Crude 560 CP
Use [illegible] + [illegible]
Percentage up to 3/5
Calculated 5700
Over Calculation

MgCl
Sat 1.857 parts water at 15C

100 pt water at 15.5 C
dissolves 200 parts of MgCl anhy

Merck's Index 1 part
MgCl dissolves 0.6 Cold +
0.3 hot.

Tried it 50 grms MgCl from
Schiel. dissolved in 35 cc water
Little cloudy probably
impurities but not more than
1/10 of 1% cloudy stuff —
temp room 86 F
think 40 cc or grms water to
50 grms as practical
1/2 or 1/2 don't clear cloud [illegible]

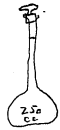
36000 lbs dry Benz S Na
20000 lbs soda —
worked OK think little
dry soda was like
a thick mush —

Try effect Benz Sulf Na
solution on ~~felt~~ cotton
Cow hair, Canvas,

Dec 22 If Can't twin off the
Dry salt from Cotton fingers
leaving 1/2" on

Henry Kauffmann
Rebecca Coffman

6 cc Benzol mixed with
250 CC Benzene Sulfonic Acid
in



gives in 10 minutes
1/16" clear benzol.

This is 2.4% of the whole —
or 12 gals for one sulfonation
The smallest point is 1/2" of mass
1/4 inch covered shows 1/4".
detect 1% or less —
In 1 hour benzol scarcely
measured any —

Get another book like this
Keep in my Table drawer at
house & Copy all formulas
etc of the diff solutions &
procedures

When was get 15%, fuses
Glenn use no. 98%

Learning how about
the Trough Coatings
for Speakers Rec C

Get 2 Extra bottoms
for Anthine Reduced
Rats

Chromosomes
Examine inside Anthine
reduced & parathes. & chafts
+ Est progress

test metals in Solution
from Centrifuges
dilute & Examined
Metals

Anthine delay & all
day till 11 am
about Supply Director
was ready 8 am

Hesley —
Wants Electric Motor on
Crane over Freezing
Tanks —

J V Miller about hooking
five hydrants &
hose —

Hayes — Get up a
Special list of 10
Opera High grade
records for Sept 1st
People complaining of
lack Opera & Classical

Hayes: Get some Indian
Bands & test 10 new
Readers acc of 6 Facts

Kennedy take Blake &
Burkhardt's letters
& investigate thoroly

Organize gang of 15
men for permanent Repair
men, NY Boat Sto —
to teach local dealers
& Satisfied Customers

100 cc of Liquor from Centrifuge clear -

Requires at 90 deg Fahr 15 cc of Saturated Solution MgCl to bring the Salt down at this temperature —

MgCl 50 grms
40 cc water

is practically Saturated, although it all dis with 35 cc water —

Next page

10 lbs white salt to 1 gal water

Determine amount necessary in our Benzine of Liquor from Centrifuge at ord temp -

Determine Capacity of Egg for White Salt

Specific Grav of Liquor from Centrifuge

1.207 at 86 Fahr 30 Cent

Weight 10.05 lbs per Gallon

Benzoic acid 1.470 at 86 Fahr 30 c

Weight 12.24 per gallon

Continued –

100cc Centrifuge Sol
15cc Sat MgCl – } OK

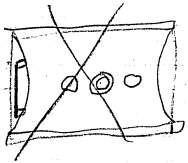
Took out a very large
granully Coagulate at
90 Fah on adding
Considerable MgCl
& Chilling in 9cc
water only little
more came out
not more than
3 to 4% of that
& Couldnt get more
by 2nd chill –

Later. 11 ~~grams~~ CC of
Sat MgCl Sol all put in
at once is about as good
as 14 put in in sections.
15cc to 100cc of Centrifuge
Sol showed Fahr it all out
with Margin –

Can put 10 grms MgCl
in 100 cc of Centrifuge
liquid & it does about
as well as adding
liquid MgCl

25 lbs Para used — July 2nd
Hoffman has 96 lbs on hand
150 lbs in Chem room

Sugar feed.



Oil Street Car track
+ all road Hurls
discs —

Paint up our old
gas plant — Soil
pipe & oil varnish

Kammerhof get me few
pounds of crystals of
Sulfite Sulphide from
your acetic chemist

Jerry Recommends
Superfined lime shells
from Feather grass

See the Centrifugal
Catalogue of
Speed

Talk to Centrifugal
Expert

6 1" Spot Shield
Valves Junkins –

6 gals to each

waste acid tank
11 Gals per min

white Salt
6 gals each tank

3 ft

acid Eqq.

white salt Eqq

36" in Solid 5 tank is 216 gals
120 Water + 1200 lbs White
[illegible] + 100 White Salt
[illegible] 145 PC
whereas 1.81 times tank

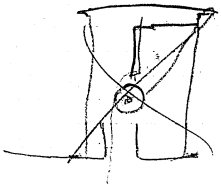
Order Vac pump
for Mg Bisulfite.

10 lbs white Salt to 1 gal water

100 gals Centrifuge liquor
requires 15 gal white
Salt Solution –
36" in acid tank
is 400 gals will require
60 gals white Salt
liquor –

Months run woodward

	gals.	Per day	%
Crude	42000	1400	
Pure Benzol	21992	733.3	52%
" Toluol	5095	169.8	12%
Refined Sol Nap	2421	81	5.8%
		984	



White Sac & Egg barrels
82 gal –

1650
1400
69.8

Loss of metals 1 sq inch
in Centrifuge liquor
48 hours

		loss
1 = Zinc		1.243
2 Tin		0.563
3 Brass	OK	.090
4 Copper		.659
5 Tinbacks plate		.248
6 Steel C R		.156
7 Aluminum		.249
8 Monel	OK	.065
9 Nickel	OK	.058
10 Wrought Iron	fair	.111
11 Tin plate		.243
12 Galvanized Iron		.513
X Cast Iron		.174

Copper can eat 1/3rd away
60 days + be useless
If nickel 2 years, if plated
economically good for years

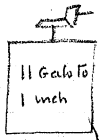
Luks for tops Iron feed
send night down 1 of
them with new Bell

Sulfonating 275 Pounds
30½ gal 48
213 Oleum — feed slowly

Send Cement work
for 20 nozzles
Spring on

Tell Bachman go ahead with
Plush Tank Nickel plating
+ let me know when ready +
to hurry —

Get the Vac Pump sure



Centrifuge acid Tank

White salt Tank

Use liquid 36" high in both.

White salt Tank 36" high 217 gals.
120 Galls water into which 1200 lbs white salt is dissolved increases in bulk 81% making 217 gals

Centrifuge Acid Tank 36" deep Holds 400 gals,
To this 60 gals of white salt solution is added
or 15 gals to 100 of acid

Sulfonation –

275 gals Benzol put in during ½ hour $30\frac{1}{2}$ gals 98% Sulfuric added then 213 gals 20% Oleum added gradually at a speed to keep temp just below boiling point of the Benzol. Tested from time to time till only about 2 or 3% Benzol left

Salting
600 gals Benzsulfonic acid
1200 " water
2700 lbs NaCl.

Fusing
3600 lbs Dry BenzNa
2000 " Caustic Na
Temp 300 to 330 —
308 to 310 best,

Disconnect top condenser
Cool down still send to
Kammerhoff –

Phone Badger when our
Bad Oil will arrive
Ask Eg expected

Teach Mallory for
muzzles – Sponges on
vat with weak alkali
~~Stores~~ · Fred put rubber
wound hose keep soda
from fence or a rubber cloth on face
against which sponge rests
Mallory connection
for drinking use Phosphoric
or Boric L Ott try both –

Make men use 2 4 bag
to wash out
L Ott to attend to
this –

Fred Ott paint steel
wheelbarrows – all melons
+ piping etc –

Boxes over melons

Store House, use Kammerhoff

Ask Shriver who makes
felt or hair cloth for
filter presses,

Try Asbestos filter cloth,
L Ott to try if Asbestos stands
the acid – Cellulose acid –

G V Miller will send over
vacuum pump – + put one of
the small Eggs between vac
filter + pump to stop acid
going in pump –

Get sketch Kammerhoff of
old still and one Kammerhoff

Nickel plate some
Square inch Copper
for trial in Centrifuge
Acid —

Try the Cow hair felt
send & get some.

Get some shovels &
hoes for handling
Centrifuge stuff —

~~Gauge of C[illegible] for Aniline Eggs —~~

~~Tap Water for Aniline~~
~~& Bring Na hypo pans~~

~~Where [illegible] up stand~~
~~on 4000 Very Blockade~~

~~Look about Iron feed~~
Hurry —

~~Keep Clung[illegible] Wagon~~
~~Sugar Lake~~

~~See about [illegible] lockers~~

Louvres over Drying
Pans Bring Sulf Na —
Stop rain —

~~See about repairing Pond~~

Why dont pump for
Well arrive

Where is pointed Tank
Aniline Salt plant.

Hurry up Aniline Eggs

See my book on
poisons — for
Myrbane & Aniline
Poison & phenol

Vel Centrifuge 8796 ft
with cloth

Every pound pulls 382
pounds

Pressure per sq inch

7½" our stuff - 5.8 cubic ft

Product dry 290 lbs
4" thick | 700 Rev

1 Slush pair — lock 1 hour
20 min each do — 1
hour = Wash 2 qts water

Not very dry but fair

Stopped & started remove
3.35 all out at 3.45
1st Barrow 2nd at 3.55
20 minutes to complete
Empty — think can be done in
12 min

Weight, Wheel + all
180 lbs wt Wheelbarrow
75 net 105 lbs

210 lbs

2nd Barrow 175 lbs
Wt barrow — 74
Net 101
Total 206 lbs

Some left making

Took 20 mins to unload a slush Cam -

Took 5 mins to run in boxfull of slush into Centrifuge.

Dis Cop per slush Cam full —

Started fed at 5 pm in 505 at 526 speeded up - to 600 @ 700 - Large. Cream Came out 2 mins after speeding —

Note change shield Valve for 1/2 inch — the 1 inch too big -

615 put in Salt water off + stopped 620. very thin cream Came when stopped

Drank it [illegible] 62 bottles Urau [illegible] 1st heat

630 detached from sides but not clean at 645

Net weight of Chars charge 218 —

Get a larger Roof Cowl & change it to Rolli - the Slurkcoal for para -

First lot 120
Last lot 124 lbs

Original Product one Slurb can, weighed after removal from Centrifuge

206 lbs Dry 120

Second batch

218 lbs Dry 124

This shows 42% water or loss

22 Hours
Product per Centrifuge at 1 hour 55 min

1584 lbs dry salt

Centrifuge

Load Centrifuge 5 min
Slow speed just so it dont slop out

Run slow 15 minutes
1/2 speed – Then run to speed 750 to 800 Revolutions for One hour, H

Then wash and run 15 minutes –

Total time

Fill	5 mins
Run Slow	15
High Speed	45
Wash run	10
Remove	20
Interval	5
for next charge	100

1 Hour 40 minutes

Dry product 124 lbs

Can reduce this

See if Lemming has
Exhausters at the
Small Wales & Saw
also Mallory — 5
foot —
How do ~~you~~ drying
gases

Dally acid up gal
of fusion liquor
25 lbs of Centrifuge
stuff —

60" Blower or Exhauster
9000 cfm 10 HP Rev 535
7800 4 HP — " 465
2 of them —

Moore Let me know
how the new Shellac
works —

Meadowcroft hurry
Schedule 5 Tow T N
Lue order —

Get a throwing or
differential roll for
breaking up
Centrifuge Stuff. —

Benzol 78
$Benz_2SO_3$ 157
$Benz_2SO_3Na$ 203 —
phenol 93 of the 203 46% is phenol

Centrifuge Cake undried 55%
Solid 45% Volatile —

Gives about 50 lbs phenol to a charge

Tell Harry Weller
Dally & Christensen
get 50 whole pressure
good —

Try Magnesite right in the acid & ditto Carb Mg & see how it follows —

2 below Zero Cant

712 – Can at end
714 Can on bottom floor
715 Started put in Wheelbarrow
718 1st Barrow loaded
724 2 Barrow "
728 3. " + Scoop
734 all crushed –
737 all in Measure box.

738 Started put in Centf
100 Rev Vim
741 all in Centfg
It is too full had run slow
+ use stick to shave off to
slip coming over
750 Running about 250
8 pm 300
802 360
807 405
811 465
816 – 610
827 810 Very stream coming out
837 750

36
9
216

11-1-11

Wants goggles spots in mens eyes

840 800 Rev considerable Stream
844 835 "
853 two 3/16 Streams coming out
859 – 750 Rev

In 10 sec gave 47 cc at 9.05 pm
Rev about 750
1 lb liquid a minute

920 dropped 216 cc coming
off per minute

at 112 am both filled
+ unfilled gave
9 cc + unfilled
Clean sharp edges

get trachoma for
Centrifuges

White Sulph. Malts 145
Centrifuged

80 cc filtered fusion
Liquor - when neutralized
with dilute H_2SO_4
gives 100 cc phenol ~~7½ cc 11.30 pm~~
~~phenol in 3 minutes.~~
~~in 7 minutes 8½ cc —~~
~~at 11.45 9 cc.~~

at
11.27 —
11.30. 7½ cc
11.35 8½ cc
11.50 9 cc
12 Midnight 9½ cc

1/10 th of
the weight
is phenol
Crude

80 cc unfiltered 103 cc
neutralized —
11.58 pm - Confused phenol top
12 midnight 8 cc confused

Dont think it makes
any difference if fusion
liquor is filtered or
not as far as getting
all the phenol is concerned

It never could be filtered in
filter press as it would
run through any filter cloth
only fine filter paper does
it & is very slow —

If there is any filtering to
be done should be on
Crude phenol bulk being 1/10 th

1240 – Wet Centrifuge
Cake 200 grms with
100 cc Centfg Liquor
put in small Vac
filter 1240 am —

2h 1 Hour it seems about
as dry as Centfuge Cake

Packed it hard with fingers

In case Centfuge Capacity
Not enough Could use
36" or 48" Vac filters
~~[illegible]~~ as addition 4 ~~[illegible]~~

50 grms Centrifuge
Cake from last Examment
140 min from start
4 Cut big piece to get
average lost 33% of it
weight in 2 hours
212 Fahr in Copper
Dry Oven —
In 2 hours + 30 minutes
Lost 34.5%

In 3 hours lost. 34.7

Didnt dry it at all its on
Watch glass 4½ dia

I weighed the ferric ox from
filtering 100 cc of fused
Salt solution —
Got — 437 mlg

3785 cc to US Gallon

This make 17 grms Fe_2O_3
to Gal of Fusion Liquid

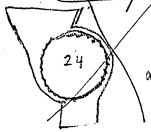
(135)

In gal bottle of fusion liquor I noticed that in 5 hours the Fe_2O_3 settled out so it was 2/3 clear down + 1/3 Fe_2O_3 stuff — after 12 hours

2½ clear to 1 settling

Manatwi lamp — Ceylon graphite split in layers

Cut leaf right with the — neck



Lecher

Woodward

Pure Benzol 52%
" Toluol 12
Solvnap 5.8

30% low
5% wash
5% in hand
20 wash oil — get it back

Naphthalene 2½ bbl after shrinks

dealer — — probably 300 lbs

Precip some with Shell Salt
Stir vigorously 4 secs of it
settles Gettled by stirring

2000 gal light oil Benzol 1040
Toluol 240
Solvnap 116

Order 24 more Muggler

Ask Sharp process
man to try Leading
Burning Evasion
Hermuke a piece
wetted wood.

Tests -

1 = White Salt liquor
2 = Sulfonating
3 Brine & Water
4 NaOH for Saturation in Recovery
5 Neutralizing
6 Alkalinity of Final Cake
7 Acidity of Dry Briquette
8 Validity in Briquetting Cake
9 Purity of phenol -
10 Analysis Sulphuric purity
11 Purity Para -
12 " Analysis Salt

Hoffman -
~~Wash Va Drum~~
Analysis right away

Coal-fingers
2 July 26
2 Aug 3
2 10th Aug

I to get the ~~Ex~~

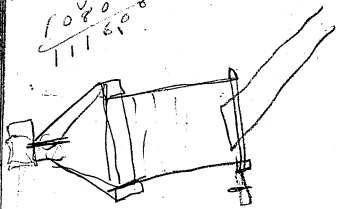
~~Cadmus Bros Brass foun~~
~~316 Franklin St~~
Bloomfields.
N J

Mason Aint you losing
Benzol at Separator box
at Condenser

See if a cock at extreme bottom
Cumolic phenol tank to draw off water

Get requests to Milt
Lead Long

3600
31
3600
10800
111600



[140]

3600
2000
5600

20000 (35,71
16800
32000
28000
40000
39200
8000

[141]

1 hour — new wool cloth
10 sec — 68 CC
1 hour 10 min 50 cc

Started 12.40.
Stopped 12 45

at	1 40	Running	68 cc
"	1 50	"	50 cc
"	1 55		25 cc
	2 PM		34 cc
	2 05		40 cc
	2 21		26 cc

Tank off — it scarcely shows
stuck at Edge or w heller.
Run hunter Home
Think 1½ hours from
start will do it if speed
sec —

180 | 454 (2.5
360
940

180 grms mm

75 lbs water in $2\frac{1}{2}$ mm 1 lb

130 mm	75 lbs
135	73
140	71
145	69
150	67
160	63
180	55

18"

Phenal contracts

Daily	US Govt	640 lbs	55 cents
Lozier		100	1.00
Monsanto		100	50c
Heyden		100	85
		940	
		1460	
		2400	

1400
600
8

2600
940
354

14000
9400
5600

94

90
14000
360

560
14000
79

16

2100
50
7050

Kammerhoff -

Uses 110 Litres Benzol
170 " 98% H_2SO_4 } 2.96 to 1

8 hours to sulfonate 3 batches 24 hours
Fuse 900 lbs Ben Sulf Soda with
720 lbs Caustic 7 to 8 hours 3 batches
24 hours Product 420 lbs Phenol
1.71 Caustic to 1 phenol

Neutralizing & Seperating Phenol in
Tank taken 8 hours Product 400 lbs

Distill 550 lbs in 12 hours Charge is
650 lbs Crude Phenol

Takes 2 hours lime to collect from Na_2SO_4,
treatment

Sulfonating mix 73.5% Sulfuric
26.5 Benz

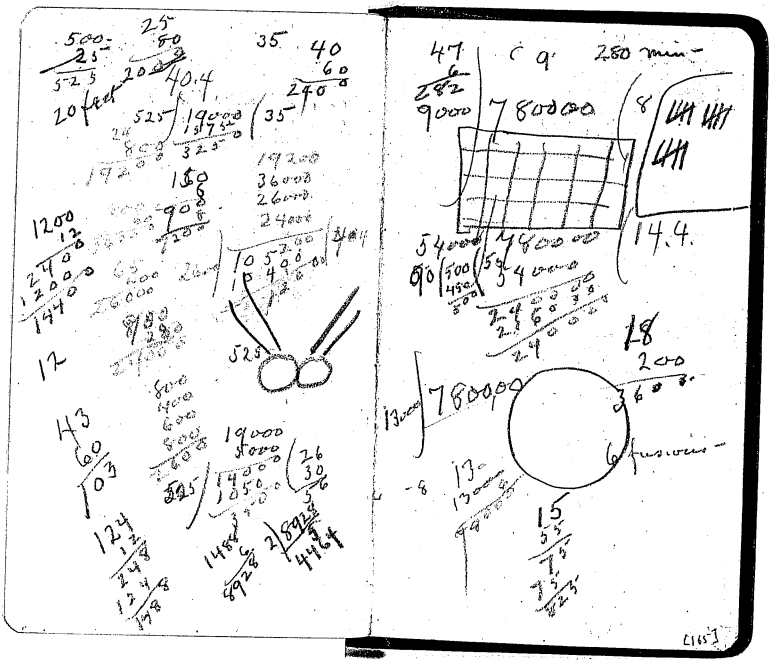
June 8th
Requires phenol for

10000 Records daily no discards	2533 Phen
12000	3039 "
15000	3800 "
20000	5066 "
25000	6330 "

This in addition to use of 20% of old records —
But not including Recovered "

22 - 2600
36 2600
11 2
36 7000
36/6
39 4800

120)14000(117
120
200
120
800

120
2
240

30
2
60